

Techeiles Found?

DR. NA'AMA SUKENIK AND PROFESSOR ZOHAR AMAR DISCUSS
THE REPUTED DISCOVERY OF ANCIENT TECHEILES

New discoveries in the world of *techeiles* are, to be sure, rare. So the news that one of the most ancient pieces of reputed *techeiles*—a piece of cloth smaller than three square inches—was found in a cave in eastern Eretz Yisrael has once again stirred interest in the important but controversial topic.

The Torah teaches us that at least one of the strings on our *tzitzis* should be made out of *techeiles*: a blue-colored string, dyed from a sea animal known as the *chilazon*. Thousands of years ago, it was a common site to see Jews with blue strings on their *tzitzis*. Over time, and specifically after the Roman destruction of the second *Beis Hamikdash*, the *mesorah* of the *chilazon* became unavailable and lost, and people stopped wearing *techeiles* in their *tzitzis*.

Over the past two centuries, however, wearing *techeiles* has seen a reawakening. This resurgence has come about largely due to two widespread claims of finding the true source of the sacred blue dye: that of the Radziner Rebbe, and that of Rav Yitzchak HaLevi Herzog.

In the late 1880s, Rav Gershon Henoch Leiner, the Radziner Rebbe, researched the subject, and he concluded that ink from the *Sepia officinalis* (the common cuttlefish) fit the criteria for *techeiles*. To this day, members of the Radziner *chasidus* in Eretz Yisrael produce *techeiles* strings obtained from the cuttlefish.

The more widely accepted source of *techeiles* came in the early twentieth century, and is based upon the findings of the former chief rabbi in Eretz Yisrael, Rav Yitzhak HaLevi Herzog. Having studied the cuttlefish used by the Radziner Rebbe, he discovered that the blue color does not come from the cuttlefish itself; rather, the color is obtained by using an additive, and that many sea animals can produce a blue dye with this same additive. After extensive research, Rav Herzog concluded that the *Murex trunculus* (a sea mollusk or snail now often referred to as *Hexaplex trunculus*) must be the true source of *techeiles*, though Rav Herzog was unable to produce the blue color in every experiment.

(Because of his failure to produce the correct dye, Rav Herzog eventually suggested a different snail, from the genus *Janthina*, as the *chilazon*. Subsequent research has cast doubts on that conclusion.)

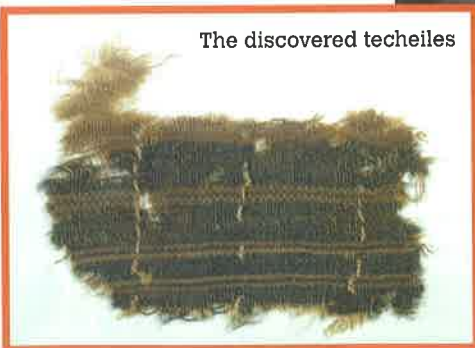
Archaeological work in Eretz Yisrael has uncovered sites that appear to be *Murex trunculus*-dye processing factories. Some have pointed to this as support for Rav Herzog's view. But no samples of

Professor Zohar Amar breaking the *murex trunculus* to extract *techeiles*



PHOTO CREDIT: RESEARCH OF PROFESSOR AMAR

The discovered *techeiles*



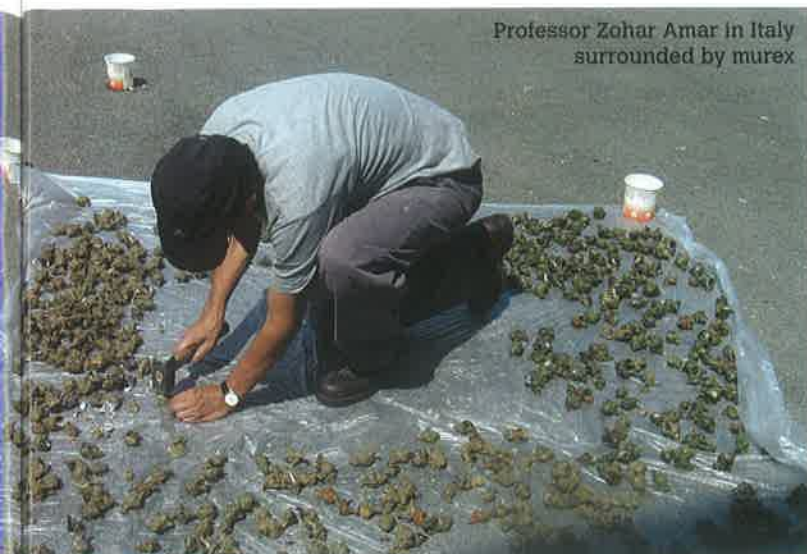
dyed cloth had been confirmed as coming from Israel.

Late last year, three strips of cloth were uncovered in the caves at Wadi Murabba'at, in the Judean Desert of Eretz Yisrael: one containing what scientists identified as *argaman* (a kind of purple dye), one containing a Bordeaux-colored dye and one containing *Murex* dye, Rav Herzog's *techeiles*. The textiles were discovered about 50 years ago, and are only now being made public after having been studied and analyzed. They have been dated to shortly after the Bar Kochba revolt (132–135 CE).

Dr. Na'ama Sukenik of the Israeli Antiquities Authority has been credited with identifying the *Murex* dye, and she spoke with Ami about the origins of the cloth.

"It was found in the Bar Yehuda site in the Judean Desert," said Dr. Sukenik. "The textile itself is almost certainly from a piece of clothing, although there is a remote chance it was from the binding of a *sefer*. The other two textiles, the Bordeaux and the *argaman*, have been positively identified as coming from clothing. The *techeiles* tex-

Professor Zohar Amar in Italy
surrounded by murex



BY NESANEL GANTZ

a purplish color. Since his passing, it has been discovered that the blue color can be consistently obtained by exposing the dye obtained from the hypobranchial glands of the *Murex trunculus* to the sun. Though that is true, what I am about to tell you is a very recent discovery: We have found ways to obtain the blue from the *Murex* without having to expose it to the sun—through very precise heating techniques.”

Professor Amar expounded upon his research with the *Murex trunculus*. “I recently spent a significant amount of time in Milan, Italy, studying the *Murex*. Our purpose was to discover the origin of the biblical *argaman* (purple dye), and we did research into the *techeiles* as well. While they are available in Eretz Yisrael, *Murex* snails are illegal to capture, as they were declared a protected natural resource. The laws regarding fishing and importing of *Murex* dyes are very regulated; even the dye I extract in Italy I am unable to bring into Israel until I dry the ink.

“I cracked open the shells of over 11,000 different *Murex* snails I obtained in the fish market in Milan. I studied basically three types: the *Murex trunculus*, the spiny dye-murex (*Murex brandaris*) and the red-mouthed rock shell (*Murex haemastoma*). With the *Murex trunculus*, I was able to constantly procure the blue color. Interestingly, the spiny dye-murex produces a turquoise, light blue color, while the *Murex haemastoma* produces a greenish color, which is in accordance with Rashi, Ibn Ezra, and other commentators. Without attempting to decide what is the ‘true’ and ‘correct’ color of *techeiles*, we have shown that for each of these interpretations, there is already some foundation in *Chazal*, and they were apparently based on the availability of the different types of murex and the different dyeing practices that were used in their times.

“With this discovery of the *techeiles* textile,” continued Amar, “you connect *halachah* to *Chazal*. *Chazal* tell us that a *kohen* who has worked with [a] *chilazon* cannot *duchen*, for the blue dye on his hands will be distracting to the congregation; some say that this is a reason for the *minhag* to cover the hands during *birkas kohanim*. *Chazal* continue that if the congregants are all fishermen, that it’s okay. One can ask: Why the *halachah* at all? It should say that a *kohen* who got his hands blue should wash it off. I can tell you from personal experience that after working with the *chilazon* for close to two weeks, my hands became so blue and no amount of scrubbing or soap could take it off. The color blue seen in this textile is the same color I obtained in Italy.”

Professor Amar personally wears *tzitzis* with *techeiles* obtained from the *Murex trunculus*.

“The *techeiles* discovered is very significant,” continued Professor Amar. “This cloth is the second-to-oldest known verified *techeiles* in history. The fact that it survived over 3,000 years is very important. This is the *techeiles* described in *Tanach*, 100 percent, and to see the Torah come alive before our very eyes is very exciting. Sadly, to date, we have not discovered any *tzitzis* with *techeiles*. That does not mean they do not exist, only that we have not discovered it yet.” ●

tile was discovered in a cave that was used by Jews as a last source of refuge to escape the Romans during the times of the destruction of the *Beis Hamikdash*. During those times in Eretz Yisrael, the Jews who were affluent would use *techeiles* to dye their clothing as opposed to using a plant-based dye, even though dye for *techeiles* was extremely expensive. It was common practice for the Jews to seek out better dyes such as *techeiles*.”

I asked Dr. Sukenik how they determined that the textiles were indeed from Eretz Yisrael.

“Dr. Orit Shamir analyzed the weaving patterns of the cloth,” she explained, “and was able to determine with certainty that while the purple textiles come from outside Eretz Yisrael, the *techeiles* textile came from Eretz Yisrael. The *techeiles* textile was almost certainly once worn by Jews. While there are some researchers who believe that these particular textiles come from Romans who went searching for escaped Jews, they probably obtained the textiles from Jews they plundered. Regardless, the *techeiles* comes from Eretz Yisrael.”

As I continued asking Dr. Sukenik questions, she interjected: “While I received credit internationally for this story, I was handed the research. The real credit for the discovery, and the person you should speak to, is Professor Zohar Amar.”

So I did.

Professor Amar holds a position with the Antiquities Authority, is a professor at Bar-Ilan University in the Land of Israel Studies and Archaeology Department, and is well-versed in all areas of *techeiles*—down to the halachic minutiae. When I spoke to Professor Amar, he explained that there is no contradiction between the Torah calling the *chilazon* a *dag* (a fish) and the *Murex* being a snail; the Torah referred to all fish creatures as *dagim*. He told me that he is planning to write an entire book on the discovery of the *techeiles*, and its implications.

He was kind enough to share some of his insights in an exclusive interview with *Ami*.

“The fact is,” explained Amar, “that chemical analysis of the textile reveals that it was 100 percent dyed with dye obtained from the *Murex trunculus*, the same animal discovered by Rabbi Herzog. Rabbi Herzog was unable to guarantee that the *Murex trunculus* was the source of *techeiles*, as he was unable to constantly produce the blue color. While Rabbi Herzog was able to procure the blue dye from the *Murex trunculus* on occasion, he often wound up with

